UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,601	08/30/2001	Simon Julian Powers	36-1477	7934

23117	7590	01/12/2006

NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER
NG, CHRISTINE Y

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/914,601	POWERS ET AL.
	Examiner	Art Unit	
	Christine Ng	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 October 2005</u>.

2a)☒ This action is **FINAL.** 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-17</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-6 and 9-17</u> is/are rejected.

7)☒ Claim(s) <u>7 and 8</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>30 August 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

2.   Claims 1, 5, 9, 10, 11, 12 and 15 are rejected under 35 U.S.C. 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the

subject matter which applicant regards as the invention.

It is unclear what is meant by "maximizing, for any pair of labels in the sequence,

the number of lower priority labels between them". It is unclear whether the lower

priority label must be less than the priority of one or both of the pair of labels. It is also

unclear what the extent of the term "maximizing" is. Depending on the distance

between a pair of labels, the maximum number of lower priority labels between them will

different.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 6,047,326 to Kilkki in view of U.S. Patent No.

6,597,682 to Kari.

Kilkki discloses in Figure 2 a packet message source comprising:

Means (user 20) arranged to include a respective packet message payload in each packet message of a sequence of packet messages. Refer to Column 7, lines 43-45.

Means (priority level computing unit 28) arranged to associate a priority label with each successive packet message in said sequence in accordance with a predetermined cyclic sequence of such labels; said priority labels each representing one of a plurality of priority levels. Each cell is assigned a priority label chosen from a predetermined cyclic sequence of eight priority levels ranging from zero, which indicates the highest priority, and seven, which indicates the lowest priority. Refer to Column 6, lines 49-54 and Column 8, lines 8-22.

Means (UNI 24) arranged to send such packet messages. Refer to Column 8, lines 23-25.

Kilkki does not disclose that the positions of the labels in the cyclic sequence maximize, for any pair of labels in the sequence, the number of lower priority labels between them.

Kari discloses in Figure 2A that a base station sends in the downlink direction information about the priority of each uplink control sub-channel. In the example in Figure 2A, every other time slot (8 of the 16 time slots) is assigned the highest priority of P4. The remaining time slots are divided according to priorities: with 4 time slots for priority P3, 2 time slots for priority P2, and 1 time slot for priority P1. Each consecutive high priority P4 time slot is separated by one lower priority time slot. Refer to Column 3, line 53 to Column 4, line 6. The number of lower priority labels between any pair of

labels is maximized. For example, between a first and second P4 is one lower priority

label (P3); between a first and third P4 is two lower priority labels (P3 and P2); between

a first and fourth P4 is three lower priority labels (P3, P2 and P3); and so on. Between

a first and second P3 is one lower priority label (P1 or P2); between a first and third P3

is two lower priority labels (P1 and P2); and so on. Between a first and second P2 is

always one lower priority label (P1). This sequence reads on "maximizing" since the

sequence allows for the maximum number of lower priority labels to be between any

two pair of labels. Therefore, it would have been obvious to one of ordinary skill in the

art at the time the invention was made to include that the positions of the labels in the

cyclic sequence maximize, for any pair of labels in the sequence, the number of lower

priority labels between them; the motivation being so that the high priority packets will

be transmitted more frequently than the lower priority packets.

5.   Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 6,047,326 to Kilkki in view of Patent No. 6,597,682 to Kari, and in further

view of U.S. Patent No. 5,495,478 to Wilkinson et al.

        Kilkki does not disclose that said packet message source has an associated

dynamic state and said respective packet message payload comprises a source state

update message.

        Wilkinson et al disclose in Figure 2 that ATM packets can be used to provide

updates on the status of its contents by using a VCI state table 54. "Linker 44 and

unlinker 46 use VCI state table 54 to link formatted ATM cells into packets and to

access and update state information for a particular VCI used by a packet and unlink

formatted ATM cells." The VCI state table includes information such as state, expected

sequence number, etc. Refer to Column 4, lines 27-54. Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to include

that said packet message source has an associated dynamic state and said respective

packet message payload comprises a source state update message; the motivation

being so that each packet will have updated status information to facilitate data

transmission to the receiving end.

6.   Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent No. 6,047,326 to Kilkki in view of U.S. Patent No. 6,597,682 to Kari, and in

further view of U.S. Patent No. 5,289,468 to Yoshida.

Kilkki does not disclose that the source further comprises means arranged

to associated a time-to-live label with each packet message.

Yoshida discloses in Figure 3 a packet frame with a time-to-live TTL field

indicating that time in seconds during which a packet may be present in the network.

Refer to Column 3, lines 38-40. Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to include that the source

further comprises means arranged to associated a time-to-live label with each packet

message; the motivation being so that the packet will be discarded after a certain

amount of time, thereby preventing packet overflow.

7.   Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent No. 6,047,326 to Kilkki in view of U.S. Patent No. 6,597,682 to Kari in view

of U.S. Patent No. 5,289,468 to Yoshida, and in further view of U.S. Patent No.

6,338,994 to Murase.

Kilkki does not disclose that the source comprises means arranged to associate

a packet message source identify with each packet message.

Yoshida discloses in Figure 3 a packet frame with a source address field

303. Refer to Column 3, line 42. Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to include that the source

comprises means arranged to associate a packet message source identify with each

packet message; the motivation being so that the network can establish a path of

transmission for the packet using its source and destination field.

Kilkki also does not disclose that the source comprises means arranged to

associate a packet message payload type setting with each packet message.

Murase discloses that an ATM packet has in its header a payload type field

which has a value of '111' if the packet cell is a dummy cell and a value other than '111'

if it is a packet cell. Refer to Column 5, line 66 to Column 6, line 9. Therefore, it would

have been obvious to one of ordinary skill in the art at the time the invention was made

to include that the source comprises means arranged to associate a packet message

payload type setting with each packet message; the motivation being so that the system

will know when it is receiving a data cell for transmission to a destination node.

8.   Claims 5, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable

over U.S. Patent No. 6,047,326 to Kilkki in view of U.S. Patent No. 6,597,682 to Kari,

and in further view of U.S. Patent No. 6,320,845 to Davie.

Refer to the rejection of claims 1, 10, 12 and 15. Furthermore, Kilkki discloses in

Figure 2 that the packet messaging system comprises:

A communications link interface (node$_A$ 32).

Said communications link interface comprising:

An input port (input to node$_A$ 32) for receiving packet messages from said

plurality of packet messages sources (UNI 24). Refer to Column 7, lines 43-45 and

Column 8, lines 23-38.

Means arranged to read a priority label associated with each received packet

message. Node$_A$ 32 accepts or discards the cell received from the UNI 24 based on the

priority level of the cell and the buffering capacity of itself. Refer to Column 8, lines 23-

38.

A queue (buffer, not shown) for queuing received packet messages. Node$_A$ 32

accepts or discards the cell received from the UNI 24 based on the priority level of the

cell and the buffering capacity of itself. Refer to Column 8, lines 23-38.

An output port (output of node$_A$ 32) for sending each packet message at the head

of said queue onto a communications link (to another node$_B$ 34 towards destination 36).

Refer to Column 8, lines 23-38.

Kilkki does not disclose that the queue queues packets messages in descending

order of their associated priority labels.

Davie disclose that per-flow queues are assigned to a calendar queue depending

on the prioritization scheme: the higher the priority associated with the packet, the

sooner it should be sent. Refer to Column 6, lines 37-47. Therefore, it would have

been obvious to one of ordinary skill in the art at the time the invention was made to

include that the queue queues packets messages in descending order of their

associated priority labels; the motivation being so that higher priority packets will be

sent before lower priority packets.

9.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 6,047,326 to Kilkki in view of U.S. Patent No. 6,597,682 to Kari in view of

U.S. Patent No. 6,320,845 to Davie, and in further view of U.S. Patent No. 6,337,861 to

Rosen.

Kilkki does not disclose that the source has means arranged to associate

a time-to-live label with each packet message, and said communications link

interface further comprising: means arranged to read a packet message time-to-live

label associated with each received packet message; means arranged to associate with

each respective packet message an indication of the period of time that packet

message has been queued; and means arranged to discard each packet message

whose associated indication indicates that that packet message has been queued for a

period of time longer than the associated packet message time-to-live label.

Rosen discloses that a packet contains a TTL field which is decremented

each time the packet is transferred from one router to another. If the number in the TTL

decrements to zero (representing the amount of time the packet has been in the

network, or "buffered" in the network), the lifetime of the packet has been exceeded and

the packet is discarded since the time that the packet has lingered in the network has

been exceeded. Refer to Column 5, lines 27-36. Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to include

that the source has means arranged to associate a time-to-live label with each packet

message, and said communications link interface further comprising: means arranged

to read a packet message time-to-live label associated with each received packet

message; means arranged to associate with each respective packet message an

indication of the period of time that packet message has been queued; and means

arranged to discard each packet message whose associated indication indicates that

that packet message has been queued for a period of time longer than the associated

packet message time-to-live label. One would be motivated to do so that the packet will

be discarded after a certain amount of time, thereby preventing packet overflow and

preventing the packet from staying in the network too long.

10.   Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable

over U.S. Patent No. 6,047,326 to Kilkki in view of Patent No. 6,597,682 to Kari in view

of U.S. Patent No. 6,320,845 to Davie, and in further view of U.S. Patent No. 5,495,478

to Wilkinson et al.

Refer to the rejection of claim 5 and claim 2. The system further comprises that:

Successively dropping packet messages from each sequence on a priority basis

leaves the remaining packet messages of the sequence as evenly spaced with respect

to the original sequence as possible. Since each high priority packet P4 is separated by

one lower priority packet (P1-P3), dropping the lower priority packets will leave the high

priority packets P4 evenly spaced (by one time slot).

Means arranged to test the link for sufficient capacity to send the packet

message at the head of the queue. Node$_A$ 32 accepts or discards the cell received from

the UNI 24 based on the priority level of the cell and the buffering capacity of itself.

Refer to Column 8, lines 23-38.

Means arranged to send the packet message at the head of the queue, when the

link has sufficient capacity, out through at least one output port onto the link. Node$_A$ 32

accepts or discards the cell received from the UNI 24 based on the priority level of the

cell and the buffering capacity of itself. Refer to Column 8, lines 23-38.

Allowable Subject Matter

11.   Claims 7 and 8 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

Response to Arguments

12.   Applicant's arguments filed 28 October 2005 have been fully considered but they

are not persuasive.

Referring to the argument that the specification uses each label just once per

cycle (page 13, lines 1-6), the claims do not state this. Kari discloses in Figure 2A

assigning a cycle sequence of priority labels since the order of labels is repeated after

15 slots. Refer to Column 3, line 53 to Column 4, line 6.

Referring to the argument that the number of lower priority labels between a pair

of labels is not maximized (page 13, lines 7-15), refer to Figure 2A. In the example in

Figure 2A, every other time slot (8 of the 16 time slots) is assigned the highest priority of

P4. The remaining time slots are divided according to priorities: with 4 time slots for

priority P3, 2 time slots for priority P2, and 1 time slot for priority P1. Each consecutive

high priority P4 time slot is separated by one lower priority time slot. Refer to Column 3,

line 53 to Column 4, line 6. The number of lower priority labels between any pair of

labels is maximized. For example, between a first and second P4 is one lower priority

label (P3); between a first and third P4 is two lower priority labels (P3 and P2); between

a first and fourth P4 is three lower priority labels (P3, P2 and P3); and so on. Between

a first and second P3 is one lower priority label (P1 or P2); between a first and third P3

is two lower priority labels (P1 and P2); and so on. Between a first and second P2 is

always one lower priority label (P1). Between a P4 and a second P3 is one lower

priority label (P2); between a P4 and a third P3 is two lower priority labels (P1 and P2);

and so on. Between a P4 and a second P2 is one lower priority label (P1). Between a

P3 and a second P2 is one lower priority label (P1). This sequence reads on

"maximizing" since the sequence allows for the maximum number of lower priority labels

to be between any two pair of labels.

Conclusion

13.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng $\mathcal{CN}$
December 29, 2005

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER